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Cleghorn et al.

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(54) **GOLF CLUB HEAD WITH FLEXURE**

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(Continued)

(56) **References Cited**

U.S. PATENT DOCUMENTS

819,900 A 5/1906 Martin

1,705,997 A 3/1929 Quynn

(Continued)

FOREIGN PATENT DOCUMENTS

JP 1259876 10/1989

JP 2002-52099 2/2002

JP 2004-351054 12/2004

OTHER PUBLICATIONS

English language translation of JP Patent Publication No. 2002-
52099A (full text).

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ABSTRACT

A golf club head including a crown, a sole, a hosel, a face,
a flexure, and a weight member. The flexure provides
compliance during an impact between the golf club head and
a golf ball, and is tuned to vibrate, immediately after impact,
at a predetermined frequency. The flexure is formed by a
forward wall and a rearward wall that combine to form a
recessed channel. The weight member is coupled to a weight
mount that is at least partially disposed in the rearward wall
of the flexure.

14 Claims, 33 Drawing Sheets

